

In 1915 Dr. Visher (WILSON BULLETIN, XXVII, page 324) refers to the same species as follows: "This interesting bird has nested regularly for many years along the Vermilion River, near the town of Vermilion, and also at the mouth of the stream, a few miles away. Nests have been found on several occasions. The colonies are small, consisting of not more than seven or eight pairs."

For several seasons Least Terns have been summer residents at a small lake within the city limits of Sioux City, Iowa. This particular lake is without islands or other suitable nesting sites, and the writer felt for a time that the birds were non-breeding birds.

The yearly return of the Least Terns in 1929 came on May 19, and from that date the birds were closely watched. A large sandbar in the Missouri River about one-half a mile from the lake, was discovered to be their home. During the early summer the adults began to carry minnows to this bar, to feed the young birds. It was noted that very little food was collected from the river, as this small lake apparently furnished an abundance of fish for both the young and adults.

On August 7 we heard a sort of begging call, and soon two young Least Terns were seen flying after some adults. They were guiding the youngsters to this fine feeding ground. These young terns were very awkward on the wing and their numerous clumsy dives were interesting to watch. The old birds brought several more fledglings from the river and soon all the young were resting on the water. The parents would fly to the young, alight on the water, and proceed to feed them with small fish.

The young terns, with their stubby tails, rather short full wings, and plump appearing bodies represented quite a contrast to their slender and graceful, winged parents. The hunt for food was over and as the sun slid behind the huge packing plants, which border little Half Moon Lake, the terns, young and old, arose in a loose flock and flew to their favorite sandbar for the night.

SIoux CITY, IOWA.

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## BREEDING OF THE LEAST TERN ON THE MISSISSIPPI RIVER

BY ALBERT F. GANIER

I first became acquainted with the Least Tern (*Sterna antillarum*) on the Mississippi River near Vicksburg, Miss., where it is fairly common and well distributed. Upon its arrival in the spring it may be seen in flocks of from six to fifty, skimming the muddy waters in search of food or, for variety, repairing to the shallow sloughs, "old rivers", and barrow pits behind the levees. While it is untiring in

its flight, nevertheless it will alight on the sandbars, on drifting logs or, inland, on stumps or muddy shores. In its snow white dress, black cap and yellow bill, a more dainty or prim little bird could not be imagined. During the first few years of my acquaintance with this species I spent much time searching for its nest on the sandbars and other places it frequented, but without success. It was not until in later years that I realized my non-success was due to searching in May and early June and that these little terns usually delay their breeding until mid summer when danger from high water is over.

On Middle Bar, on the Mississippi River above Tiptonville, Tenn., I found my first nests in early June, 1921, but it was not until June 20 that they were found to have eggs. Two weeks prior to the latter date I found the little colony very much interested in a small area of the sandbar several hundred feet from the water's edge and well out from the willow growth. Many were sitting on the sand where there was an abundance of small scattered rocks and slag and on my approach, arose to join those in the air in noisy clamor. Careful search showed that no eggs had yet been laid but a number of little depressions had been formed in the sand. I marked the situation and secured from Albert Noll, my boatman, a promise that he would return at a later date and advise me of results. This he did on June 20, collecting two sets of two and three eggs respectively, which he forwarded to me and which are now in my collection. Incubation was estimated at four and eight days. I have had no opportunity to revisit this or other likely localities since then, at the proper season.

On August 3, 1928, Mr. Ben B. Coffey of Memphis, found four nests containing eggs on a Mississippi River sandbar, five miles north of that city. He has very kindly furnished me the data to include in this sketch. On July 31 he made his first visit to the bar, having waited for the unseasonably high water to subside, and found about fifty of the terns flying about. At their point of greatest interest he found several of the little depressions in the sand surrounded by many of their tracks. On August 3 he revisited the bar and found three nests containing two eggs each and another with one, all of which he left. There were thirty or forty of the terns about and, regrettably, four dead ones lay near by, having apparently been shot. Two days later he returned and found only two nests with two eggs and a single egg half covered by blown sand. These two sets which he collected and forwarded to me for preparation, proved to be incubated seven and nine days. Reckoning their total incubation period at 14-16 days, as given by Bent, it is apparent that they were deposited

about July 27 and 29. There was only one "indication" of a new nest on August 5. On this date there were about twenty of the Least Terns in the neighborhood. There were also four Black Terns on the bar, this being an unusually early date for their arrival. On August 3 and 5, there were also observed Wood Duck, Little and Great Blue Herons, and a number of small shore birds, unidentified for lack of time. The fisherman, in whose boat Mr. Coffey went to the bar, said that during his three years of residence there the terns had nested each summer.

On July 7, 1929, he again visited the above described nesting colony and found six nests, on slightly higher ground. One con-

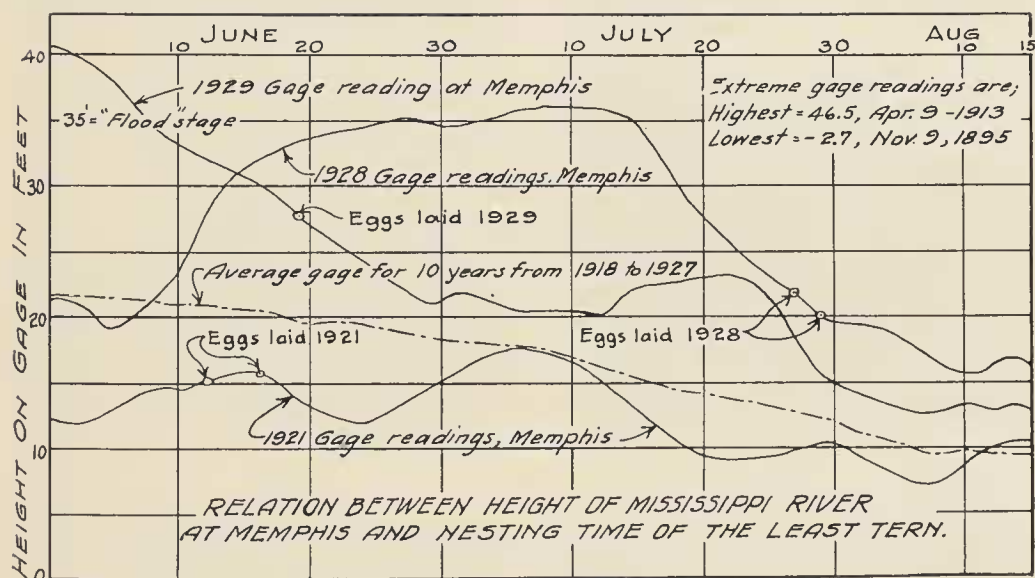


FIG. 5. Graph showing relation of nesting time of the Least Tern to the water level.

tained one egg, two held two eggs, while one held one young, two or three days old. Returning on July 14 he found thirteen occupied nests, including those of the previous visit. They were in two groups, about a hundred yards apart. Of eggs or young, one held three, seven held two, and five held one. A number of photographs were taken of the nests. On photographing the young they would stand panting in the sunshine for only a few moments and then run into the shadow of the photographer's leg. The nests were situated 150 to 200 feet from the water's edge. The following 1929 river data are pertinent. The bar emerged from the river on June 12 when the gauge read 32.0. The first eggs were laid June 19 with the gauge at 27.6. On the visit of July 7, the gauge read 20.2, and on the 14th it read 21.4.



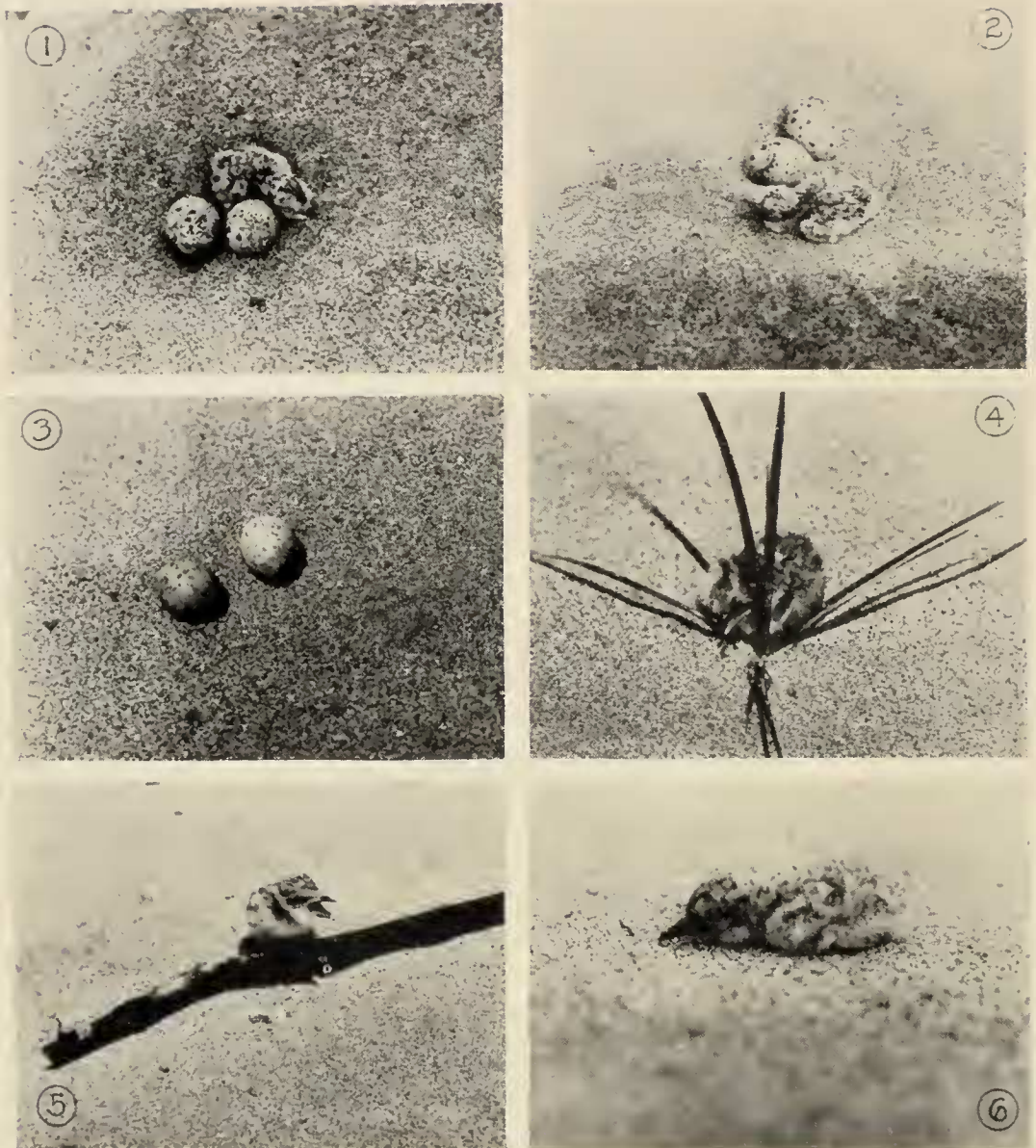


FIG. 6. Nests of the Least Tern near Memphis, Tenn. 1 and 2, eggs and young, six hours old, on the wind-blown sands. 3, two eggs in situ. 4, young seeking shade of blades of grass. 5, young showing effect of heat. 6, young at ease, about one day old.

A study of the Memphis River gauge chart (appended) shows the relation between the stage of the water and the nesting of this species, and that until the sandbars are well out of water no nests may be expected. The line of average for ten years past indicates that this date would be about June 18 or whatever date, after the middle of June, the water falls to around twenty-two feet on the gauge. It is probable that small nesting colonies of Least Tern may be found every ten or fifteen miles along the river and, due to isolation and such wide distribution, disturbance by humans should not be a great factor in their decrease. At the present time they seem to be holding their own. Sandstorms on the bars are frequent and it is likely that drifting sand covers and destroys many of their eggs and possibly young as well.

The present breeding range of the Least Tern is known to be from Massachusetts, along the South Atlantic and Gulf coasts and up the Mississippi as far as St. Louis. I am unable to find a specific breeding record, however on inland waters with the exception of Bent's quotation from Mabbetts's forty-year-old record near Natchez, and perhaps Bartsch's notes in the *Auk* for January, 1922, p. 101. The latter, on August 1, 1907, near Cairo, Ill., and on August 12, at the confluence of the Duck and Tennessee Rivers in Tennessee, observed these birds carrying food in their bills, supposedly to young birds on their nests. This food carrying habit, however, is by no means a sure index to the presence of nearby nests. The adult birds feed their young for weeks after they have left their breeding grounds and at such time they visit sloughs, ponds, lakes, and rivers far from their regular breeding places. Even prior to the nesting season, the birds have a pretty habit of feeding each other during the weeks of courtship. On Reelfoot Lake, Tenn., where these terns are common at that time, I have seen one of them sit on a floating log and be repeatedly fed by another, presumably its mate, and presumably a male, the sexes being alike. The recipient takes the attitude of a young bird, with wings quivering and half open. Mr. Coffey noted the same performance during June at Memphis.

NASHVILLE, TENN.